AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) An electrically conductive layer, comprising:

a copper alloy which includes at least one of Ag, As, P, Si, Bi, Sb, and Ti at not less than 0.1 percent by weight, so as to increase a crystal grain size and reduce crystal grain boundaries,

wherein said copper alloy further includes at least one of Mo, Ta and W in a range of not less than 0.1 percent by weight to not more than 1 percent by weight, and

~~wherein said copper alloy further includes at least one of Cr and Ni in a range of not less than 0.1 percent by weight to not more than 1 percent by weight~~

wherein said at least one of Mo, Ta and W being higher in density than copper is present on said crystal grain boundaries, whereby said at least one of Mo, Ta and W suppresses a diffusion of copper.

2. (Original) The electrically conductive layer as claimed in claim 1, wherein said at least one of Ag, As, Bi, P, Sb, Si, and Ti is included in said copper alloy in a range of not less than 0.1 percent by weight to not more than a maximum solubility limit to copper, so that said copper alloy is in a solid solution.

3. (Canceled)

4. (Original) The electrically conductive layer as claimed in claim 2, wherein said copper alloy further includes at least one of Cr and Ni in a range of not less than 0.1 percent by weight to

not more than 1 percent by weight.

5. (Canceled)

6. (Currently Amended) The electrically conductive layer as claimed in claim 2, wherein said copper alloy further includes at least one of Ge and Mg in a range of not less than 0.1 percent by weight to not more than a maximum solubility limit ~~to~~ of copper.

7. (Canceled)

8. (Original) The electrically conductive layer as claimed in claim 6, wherein said copper alloy further includes at least one of Cr and Ni in range of not less than 0.1 percent by weight to not more than 1 percent by weight.

9. (Original) The electrically conductive layer as claimed in claim 7, wherein said copper alloy further includes at least one of Cr and Ni in a range of not less than 0.1 percent by weight to not more than 1 percent by weight.

10. (Original) The electrically conductive layer as claimed in claim 2, wherein said electrically conductive layer comprises an interconnection layer within a groove in an insulation layer.

11. (Original) The electrically conductive layer as claimed in claim 10, wherein said interconnection layer exists on a barrier metal layer extending on a bottom and side walls of

said groove.

12. (Currently Amended) An electrically conductive layer, comprising:

a copper alloy which includes at least one of Mo, Ta and W in a range of not less than 0.1 percent by weight to not more than 1 percent by weight,

wherein the mass-transfer of copper is suppressed through said copper alloy,

wherein said copper alloy further includes at least one of Ag, As, P, Si, Bi, Sb, and Ti in a range of not less than 0.1 percent by weight to not more than a maximum solubility limit ~~to~~ of copper, so as to increase a crystal grain size and reduce crystal grain boundaries, ~~and~~

wherein said copper alloy further includes at least one of Ge and Mg in a range of not less than 0.1 percent by weight to not more than a maximum solubility limit of copper, and

wherein said at least one of Mo, Ta and W being higher in density than copper is present on said crystal grain boundaries, whereby said at least one of Mo, Ta and W suppresses a diffusion of copper.

13-14 (Canceled)

15. (Canceled)

16. (Original) The electrically conductive layer as claimed in claim 12, wherein said copper alloy further includes at least one of Cr and Ni in a range of not less than 0.1 percent by weight to not more than 1 percent by weight.

17-19 (Canceled)

20. (Original) The interconnection layer as claimed in claim 12, wherein said electrically conductive layer comprises an interconnection layer within a groove in an insulation layer.

21. (Original) The interconnection layer as claimed in claim 12, wherein said interconnection layer exists on a barrier metal layer extending on a bottom and side walls of said groove.

22. (Currently Amended) A semiconductor device, comprising:

a semiconductor substrate;

an insulation layer over said semiconductor substrate, and said insulation layer having a trench groove;

a barrier metal layer on a bottom and side walls of said trench groove; and

an ~~electrically conductive layer provided in an~~ interconnection layer on said barrier metal layer, and said interconnection layer filling said trench groove,

wherein said interconnection layer comprises a copper alloy which includes at least one of Ag, As, P, Si, Bi, Sb, and Ti in a range of not less than 0.1 percent by weight to not more than a maximum solubility limit ~~to~~ of copper, so that said copper alloy is in a solid solution, so as to increase a crystal grain size and reduce crystal grain boundaries,

wherein said copper alloy ~~further~~ includes at least one of Mo, Ta and W in a range of not less than 0.1 percent by weight to not more than 1 percent by weight, and

~~wherein said copper alloy further includes at least one of Ge and Mg in a range of not less than 0.1 percent by weight to not more than 1 percent by weight~~

wherein said at least one of Mo, Ta and W being higher in density than copper is present on said crystal grain boundaries, whereby said at least one of Mo, Ta and W suppresses a diffusion of copper.

23. (Canceled)

24. (Original) The semiconductor device as claimed in claim 22, wherein said copper alloy further includes at least one of Cr and Ni in a range of not less than 0.1 percent by weight to not more than 1 percent by weight.

25-29 (Canceled)

30. (Currently Amended) A semiconductor device, comprising:

a semiconductor substrate;

an insulation layer over said semiconductor substrate, and said insulation layer having a groove;

a barrier metal layer on a bottom and side walls of said groove; and

an interconnection layer on said barrier metal layer, and said interconnection layer filling said groove,

wherein said interconnection layer comprises a copper alloy which includes at least one of Mo, Ta and W in a range of not less than 0.1 percent by weight to not more than 1 percent by weight,

wherein said copper alloy further includes at least one of Ag, As, Bi, P, Sb, Si and Ti in

a range of not less than 0.1 percent by weight to not more than a maximum solubility limit of copper, so that said copper alloy is in a solid solution, so as to increase a crystal grain size and reduce crystal grain boundaries, and

wherein said at least one of Mo, Ta and W being higher in density than copper is present on said crystal grain boundaries, whereby said at least one of Mo, Ta and W suppresses a diffusion of copper.

31. (Canceled)

32. (Currently Amended) The semiconductor device as claimed in claim 30, wherein said copper alloy further includes at least one Ge and Mg in a range of not less than 0.1 percent by weigh to not more than a maximum solubility limit ~~to~~ of copper.

33. (Canceled)

34. (Original) The semiconductor device as claimed in claim 30, wherein said copper alloy further includes at least one of Cr and Ni in a range of not less than 0.1 percent by weight to not more than 1 percent by weight.

35-64 (Canceled)